USER MANUAL

Excel Care™ Bariatric Bed

From Hill-Rom

usr135ra

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NOTE:
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Document Symbols

This manual contains different typefaces and icons designed to improve readability and increase understanding of its content:

- Standard text—used for regular information.
- **Boldface text**—stresses a word or phrase.
- **NOTE:**—sets apart special information or important instruction clarification.
- The symbol below identifies a WARNING or CAUTION:

Warning and Caution

  - A WARNING identifies situations or actions that may affect patient or user safety. Ignoring a warning could result in patient or user injury.
  - A CAUTION points out special procedures or precautions that persons must obey to avoid equipment damage.

- The symbol below identifies a CAUGHT HAZARD WARNING:

Caught Hazard Warning

- The symbol below identifies a CHEMICAL HAZARD WARNING:

Chemical Hazard Warning

- The symbol below identifies an ELECTRICAL SHOCK HAZARD WARNING:

Electrical Shock Hazard Warning

Intended Use

⚠ WARNING:

Do **not** use the Excel Care™ Bariatric Bed with patients who weigh more than 1000 lb (454 kg) or extend past the fully-extended surface width. Patient injury or equipment damage could occur.

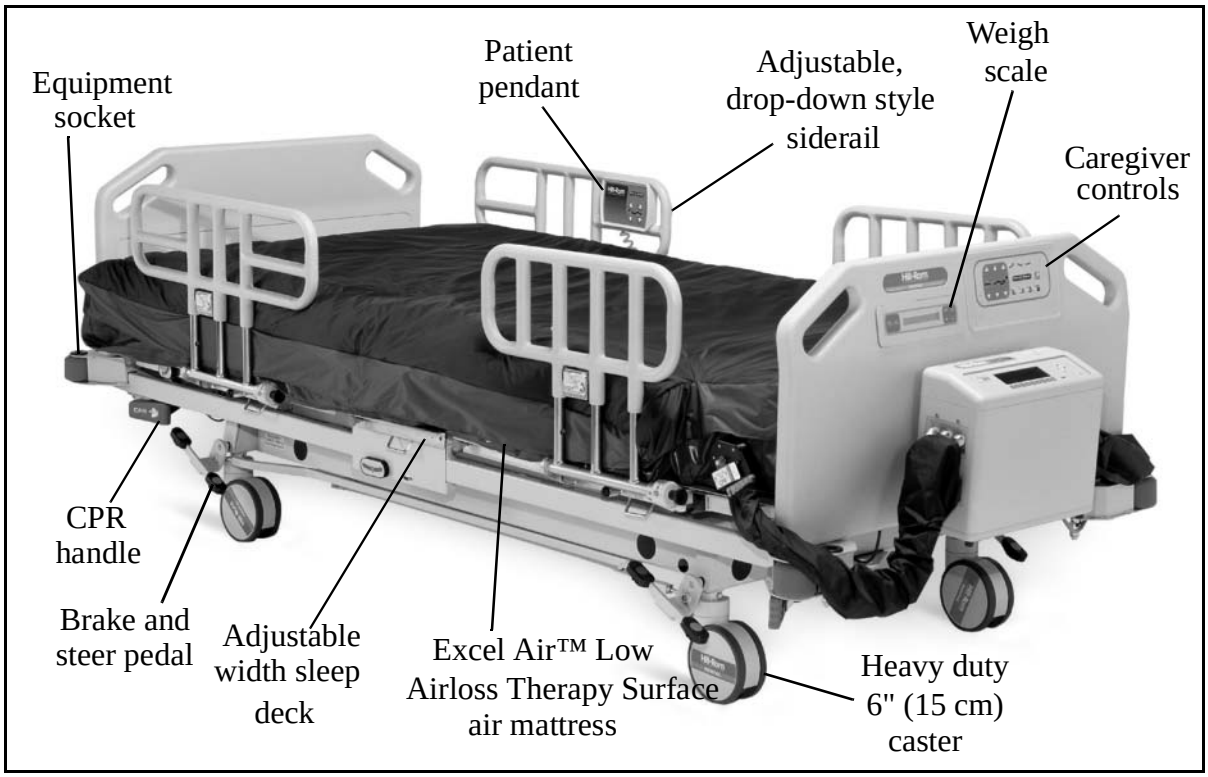
The Excel Care™ Bariatric Bed is for bariatric patients of all age groups with varying medical and physical conditions. The Excel Care™ Bariatric Bed supports patient weights between 250 lb and 1000 lb (113 kg and 454 kg). Do not use the bed with patients who weigh less than 250 lb (113 kg), weigh more than 1000 lb (454 kg), or who extend past the fully-extended surface width.

Introduction

This manual contains information necessary for normal operation of the Excel Care™ Bariatric Bed from Hill-Rom. Before operating the Excel Care™ Bariatric Bed, make sure you read and understand in detail the contents of this manual. It is important that you read and obey the aspects of safety contained in this manual. Any reference to a side of the bed is from the patient's view lying in the bed on his or her back.

The Excel Care™ Bariatric Bed is equipped with an integral scale intended to weigh the patient in the bed. The scale may be used for diagnostic or therapeutic purposes as determined by medical professionals, as long as the scale performance parameters specified in this manual are understood.

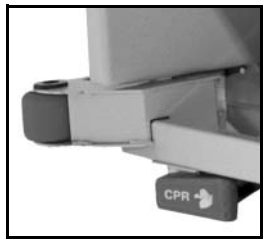
Features



The Excel Care™ Bariatric Bed has these features:

- 115 V AC power transformer that converts the system to 24 V DC
- Three-prong, hospital-type power plug, with grounding that meets National Fire Protection Association (NFPA) standards
- Adjustable, drop-down style siderails that stow below the sleep deck during transport
- 88" (224 cm) long sleep deck, with width adjustable from 40" to 50" (102 cm to 127 cm)
- Heavy duty 6" (15 cm) casters
- Equipment sockets—one IV socket and two round sockets on each corner of the bed
- Optional weigh scale with a 999 lb (453 kg) capacity
- **Optional** Excel Air™ Low Airloss Therapy Surface air mattress or **standard** foam mattress with inflatable side air bolsters

Put the Bed into the CPR Position



The CPR controls are handles installed under the sleep deck on the right-hand side of the bed, at both ends of the bed.

The Excel Air™ Low Airloss Therapy Surface also has an emergency **CPR** pull so the mattress assembly may deflate quickly. The **CPR** pull is located at the foot end of the mattress assembly.

1. If the bed has an Excel Air™ Low Airloss Therapy Surface, pull up on its **CPR** pull until a yellow **CPR Open** label is visible. The mattress assembly will begin to deflate.
2. Pull and hold the CPR control until the head section comes to a stop in the flat position.

NOTE:
When operated, the CPR control lowers the head section to the horizontal position. This function can be used when power is not available.

NOTE:
If you release the CPR control during operation, the head section will stop lowering.

NOTE:
The rate at which the air leaves the mattress depends on the weight of the patient.

After CPR, to start the normal operation of a bed with the Excel Air™ Low Airloss Therapy Surface, do as follows:

1. Firmly push the **CPR** pull down until it is flat against the mattress.
2. At the air supply unit, press **Max Firm** to quickly inflate the mattress assembly.

Use the Siderails

⚠ WARNING:
Evaluate patients for entrapment risk according to facility protocol, and monitor patients appropriately.

⚠ WARNING:
Evaluate patients for entrapment risk according to facility protocol, and monitor patients appropriately. Make sure all siderails are fully latched when in the raised position. Failure to do either of these could result in serious injury or death.

NOTE:
Siderails are intended to be a reminder to the patient of the unit's edges, not a patient-restraining device. When appropriate, Hill-Rom recommends that medical personnel determine the correct methods necessary to make sure a patient remains safely in bed.

Adjust the Vertical Height of the Siderail

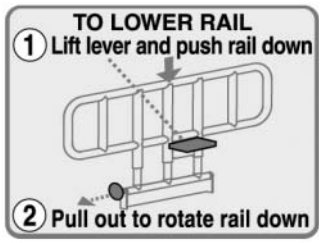
- **Raise**—

1. Pull up on the siderail latch, and pull the siderail up until its latches in the extended height.
2. Make sure the siderail stays in the raised position.

- **Lower**—

1. Pull up on the siderail latch, and push the siderail down until it latches in its lowest vertical position.
2. Make sure the siderail stays in the lowest position.

Raise and Lower the Siderail



- **Raise**—Pivot the siderail up until it locks in the raised position.
- **Lower**—

1. Completely lower the vertical height of the siderail.
2. Pull out on the knob on the lower side of the siderail.

⚠ CAUTION:
Do **not** attempt to raise the vertical height of the siderail while pivoting it to the stowed position under the bed. Equipment damage could occur.

3. Pivot the siderail away from the bed until it hangs in the stowed position against the stop under the bed. Do **not** attempt to raise the vertical height of the siderail while pivoting it to the stored position.

Remove and Install the Headboard

The headboard is at the head end of the bed. It attaches to the head end of the frame, and **does not** move with the sleep deck.

- **Remove**—For increased access to the patient's head, grasp the headboard, and lift straight up to remove it.
- **Install**—

1. Align the headboard's pins with the sockets in the frame.
2. Lower the headboard into the sockets, and push the headboard down until its bottom rests on the frame.

Use the Equipment Sockets

There are four equipment sockets for the attachment of accessories. The equipment sockets are at each corner of the bed.

The equipment sockets can be used to mount IV poles, ISS poles, traction equipment, and oxygen tank holders.

NOTE:
The equipment sockets for the IV poles are identified with labels.

Use the Drainage Bag and Patient Restraint Holders

⚠ WARNING:

Patient restraints are not intended as substitutes for good nursing practices. Physical restraints, even correctly installed, can result in entanglement, physical injury, and death, particularly with agitated and disoriented patients. Monitor patients when using physical restraints in accordance with legal requirements and facility protocol.

⚠ WARNING:

Restraints must be attached to the articulating sections of the system at the correct attachment points. Failure to do so may result in patient injury.

⚠ CAUTION:

Do not exceed the load capacity of the drainage bag holders. Equipment damage could occur.

Drainage bag holders are mounted on the center of the bed. The safe working load of each drainage bag holder is 5.5 lb (2.5 kg).

The holders may be used for any combination of these drainage devices:

- Fecal incontinence bag
- 250/2000 ml Foley collection bag
- PLEUR-EVAC®[1] on foot end holders (during transport only)

When the bed is docked, put the PLEUR-EVAC® device or other chest drainage devices on the floor, clear of the bed so there is space for bed movement.

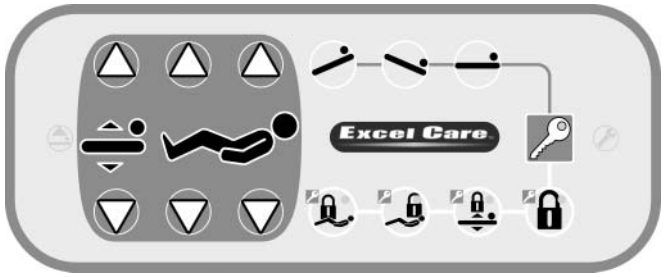
The drainage bag holders facilitates the use of vest, wrist, waist, and ankle restraints. Hill-Rom makes no recommendation regarding the use of physical restraints. Users should refer to legal restrictions and applicable facility protocols before physical restraints are used.

1. PLEUR-EVAC® is a registered trademark of Deknatel, Inc.

Use the Footboard Caregiver Controls

⚠ WARNING:
Mechanical parts under the bed pose a risk of serious injury. Exercise control over visitors, especially children, to keep people out from under the bed and prevent unauthorized access to the bed positioning controls. Failure to do so could result in patient injury, personal injury, or equipment damage.

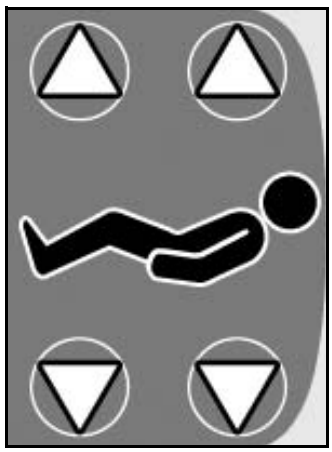
The caregiver controls are installed in the footboard.



Raise and Lower the Head and Knee Sections

Head Section

⚠ WARNING:
To help prevent inadvertent bed movement, make sure the casters are locked before raising or lowering the head section. Failure to do so could result in patient injury, personal injury, or equipment damage.



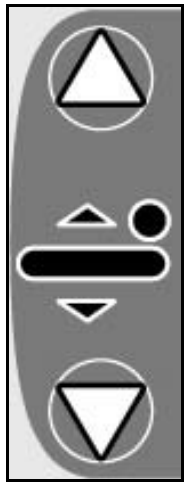
- **Raise**—Press and hold the **Head Up** control until the head section is at the applicable angle.
- **Lower**—Press and hold the **Head Down** control until the head section is at the applicable angle.

NOTE:
The head section stops at any angle between the flat horizontal position and an upright position of approximately 50°.

Knee Section

- **Raise**—Press and hold the **Knee Up** control until the knee section is at the applicable angle.
- **Lower**—Press and hold the **Knee Down** control until the knee section is at the applicable angle.

Raise and Lower the Bed



The bed adjusts in height from a low position, for patient entry or exit, to a high position, for examination.

- Raise—Press and hold the **Hilow Up** control until the bed is at the applicable height.

⚠ WARNING:
Use caution when lowering the bed frame. To avoid injury, keep extremities from under the lowering bed frame.

- Lower—Press and hold the **Hilow Down** control until the bed is at the applicable height.

Use the Enable Control

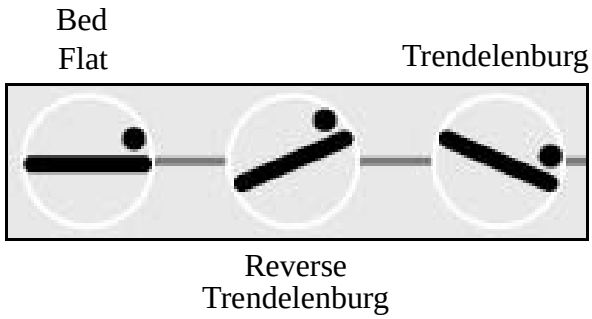
The **Enable** control is on the footboard caregiver controls only. The **Enable** control helps prevent unauthorized operation of certain caregiver controls. The **Enable** control must be engaged before the caregiver controls will operate. When engaged, the **Enable** indicator stays on for 60 seconds. During this time, the caregiver can use any caregiver Trendelenburg positioning or bed function lockout control.

Lock Out the Bed Controls

The Lockout controls on the caregiver siderail control panel lock out the bed's articulating functions. Each function can be locked out individually, or using the All Motors Lockout control, all functions can be locked out at the same time.

- Lock—Press and hold the **Enable** control, and then press the applicable lockout control. The control's lockout indicator will come on.
- Unlock—Press and hold the **Enable** control, and then press the applicable lockout control. The control's lockout indicator will go off.

Put the Bed in the Bed Flat or Trendelenburg or Reverse Trendelenburg Position



Bed Flat

The **Bed Flat** control puts the sleep deck in the flat position (head and knee section down).

NOTE:
The **Bed Flat** control does **not** take the bed out of the Trendelenburg or Reverse Trendelenburg position.

1. Press the **Enable** control.
2. Press and hold the **Bed Flat** control until all sections are flat and the system stops.

Trendelenburg or Reverse Trendelenburg

The Excel Care™ Bariatric Bed is capable of 12° Trendelenburg and 10° Reverse Trendelenburg. The Trendelenburg and Reverse Trendelenburg controls can be operated at any bed height.

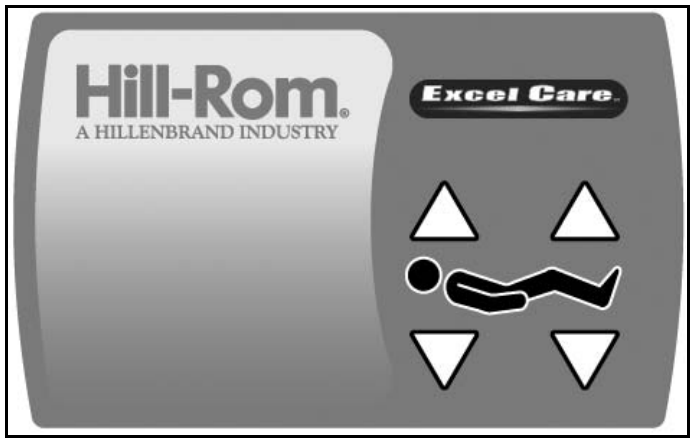
1. Press the **Enable** control.
2. For **Trendelenburg**, press and hold the **Trendelenburg** control until the foot end of the bed rises relative to the head end.

   or

   For **Reverse Trendelenburg**, press and hold the **Reverse Trendelenburg** control until the head end of the bed rises relative to the foot end.
3. To change the bed position to Trendelenburg or Reverse Trendelenburg, do **one** of these:
   - Press the opposite Trendelenburg control: **Trendelenburg** or **Reverse Trendelenburg**.
   - Press the **Hilow** control (see “Raise and Lower the Bed” on page -14).

Use the Patient Pendant

Install and Remove the Patient Pendant



- **Install**—

1. Connect the patient pendant to the bed at one of the connectors on either side of the bed.
2. Put the pendant into position next to the opening in the head end siderail.
3. Set the top edge of the pendant into the siderail so it engages the upper section of the siderail.
4. Turn the lower edge of the pendant in until it **clicks** into place inside the siderail.

- **Remove**—Gently pull on the lower edge of the pendant until it pops out of the siderail.

Raise and Lower the Head and Knee Sections

Head Section

⚠ WARNING:
To help prevent inadvertent bed movement, make sure the casters are locked before raising or lowering the head section. Failure to do so could result in patient injury, personal injury, or equipment damage.

- **Raise**—Press and hold the **Head Up** control until the head section is at the applicable angle.
- **Lower**—Press and hold the **Head Down** control until the head section is at the applicable angle.

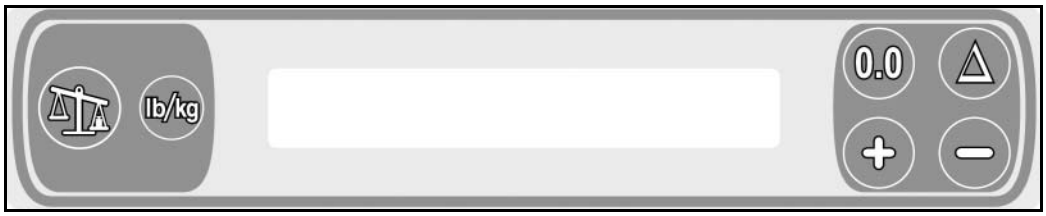
NOTE:
When the head section is articulated, the automatic contour function also articulates the knee section.

Knee Section

- **Raise**—Press and hold the **Knee Up** control until the knee section is at the applicable angle.
- **Lower**—Press and hold the **Knee Down** control until the knee section is at the applicable angle.

Weigh the Patient

Use the scale to get and monitor the weight data of the patient.



Scale Controls

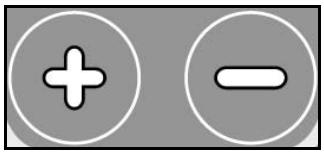
- **Zero**—Changes the weight display to zero. Do **not** press when the patient is in the bed.

- **Weigh**—Weighs the patient.

- **Pounds/Kilograms (lb/kg)**—Switches the display mode to either pounds (lb) or kilograms (kg).

- **Hold**—Lets items be added or removed from the bed without affecting the shown patient weight value, or if a known error exists, to lets the caregiver manually correct the shown patient weight.

- **Add (+)/Subtract (-)**—When in the Hold mode, lets the caregiver manually adjust the shown patient weight, if a known error exists.



Zero the Scale

1. Examine the scale display. If necessary, press the **Hold** control to clear any messages on the scale display.

NOTE:
When the bed is first plugged into an appropriate power source, the scale display shows **Power Interrupted**, followed by **Press +**.

2. Before pressing the **Zero** control, do as follows:
    a. Make sure the patient is **not** on the bed.
    b. Make sure all linens, pillows, and necessary caregiving items are in position on the bed.
3. Press and hold the **Zero** control as the digits on the right count down to zero. The display will show **Hold To Zero** as the digits count down.
4. When the display shows **Please Wait,** and then **Hands Off**, release the **Zero** control. Do **not** touch the bed.
5. When the display shows **Weight = 0.0 lb**, put the patient on the bed.

Change Bed Items and Move the Bed or Patient

If it is necessary to add or remove items on the bed or to move the bed and/or the patient when the scale is on, do as follows:

1. Press and hold the **Hold** control. The display shows **Hold** as the digits on the right count down to zero.
2. When the display shows **Please Wait,** and then **Hands Off**, release the **Hold** control.
3. When the display shows **Hold**, make the necessary adjustments to the bed and/or patient.
4. When the adjustments are complete, press the **Hold** control to exit the Hold mode.

NOTE:
If the Hold mode is left unattended for more than 3 minutes, the display shows **Left in Hold—Press + to resume weigh mode**.

Correct the Shown Patient Weight

If the shown patient weight is known to be wrong, do as follows to manually correct it:

1. Press and hold the **Hold** control. The display shows **Hold** as the digits on the right count down to zero.
2. When the display shows **Please Wait** and then **Hands Off**, release the **Hold** control.
3. When the display shows **Hold**, press the **Add** or **Subtract** control to correct the shown patient weight.
4. When the adjustments are complete, press the **Hold** control to exit the **Hold** mode.

NOTE:
If the **Hold** mode is left unattended for more than 3 minutes, the display shows **Left in Hold—Press + to resume weigh mode**.

5. Do **one** of these:
    - To save the changes and start normal weight monitoring, press the **Hold** control again.
    - To erase the changes, press the **Weigh** control.

Disconnect Power When the Scale is in Use

If it becomes necessary to disconnect the bed's power when the scale is in use, such as for patient transport, do as follows:

1. Before disconnecting the bed's power, note the shown patient weight.
2. Unplug the bed from its power source.
3. Move the bed and/or patient as necessary.
4. When the patient is in the correct position, plug the bed into an appropriate power source. The display shows **Power Interrupted** and then **Press +**.
5. Examine the shown patient weight:
    - If the shown patient weight is correct, the system is ready.
    - If the shown patient weight is **not** correct, manually correct it (see "Correct the Shown Patient Weight" on page -18).
    - If the patient's weight is **not** known, remove the patient from the bed, and zero the scale (see "Zero the Scale" on page -18).

Adjust the Width of the Bed

To increase or decrease the width of the bed, extend or retract each bed width extender on both sides of the bed. Simultaneously push the blue release knob and slide the bed width extender in or out until the bed is at the applicable width. Make sure the release knob springs back into the locked position.

Use the Bumpers

Bumpers, at the head end of the bed, help protect the bed, wall, and any headwall system from damage.

Set the Brakes or Steer the Bed

⚠ WARNING:

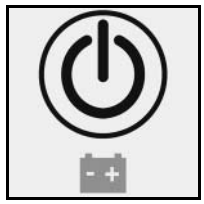
Unless transporting the patient, always set the brakes when the bed is occupied. Reconfirm that the brakes are set before any patient transfer. Failure to do so may result in personal injury or equipment damage.

The Brake and Steer controls are at the four corners of the bed frame. There are three positions:

- **Brake**—keeps the bed from moving.
- **Neutral**—lets the caregiver move the bed sideways.
- **Steer**—lets the caregiver move the bed move in a straight line.

Press the orange brake foot pedal down to lock the caster. Press the green steer foot pedal down to unlock the caster.

Use the Battery Backup Control



The **Battery** control is at the right-hand corner, head end of the bed, under the headboard just above the power cord.

To start battery backup power, press and hold the **Battery** control for 2 to 3 seconds. All articulation functions are available. The battery stays active for 10 minutes after the last control is operated.

Charge the Battery

⚠ WARNING:

Keep the bed plugged into the power source until the battery indicator goes off (charging time is approximately 10 hours). Failure to do so could result in the inability to operate the bed when power is not available.

If the battery charge level is low, an indicator will flash. To recharge the battery, plug the bed into an appropriate power source.

While the battery is charging, the indicator flashes. When the indicator stops flashing the battery is fully charged. When plugged into an appropriate power source and the indicator is not illuminated, the battery has lost all of its charge or is disconnected.

Transport the Patient on the Bed

⚠ CAUTION:

Before transporting the bed, make sure that the power cord, hoses, and other equipment are correctly stowed. Failure to do so could result in equipment damage.

⚠ CAUTION:

Do not push or pull the bed by IV poles, siderails, or other equipment. Use the headboard, footboard, or other designated locations. Failure to do so could result in equipment damage.

To transport the patient on the bed, do as follows:

1. Deflate the side bolsters on the mattress assembly:
   - For an **Excel Air™ Low Airloss Therapy Surface air mattress**, see “Deflate and Inflate the Side Bolsters” on page -28.
   - For an **Excel Air™ Foam Mattress**, see “Deflate and Inflate the Side Bolsters” on page -30.
2. Push the expandable side extensions into the sides of the bed (see “Adjust the Width of the Bed” on page -19).
3. Do as follows at the air supply unit:
   a. Press the **Power** switch to the **Off** position.
   b. Unplug the air supply unit from its power source.

NOTE:
Shut-off valves in the air hoses keep the air in the head, seat, and foot sections of the mattress assembly when the air supply unit is unplugged from its power source. The side air bolsters do **not** have such shut-off valves.

   c. Unplug the power cord from the air supply unit.
   d. Use the magnets on the power cord to keep the power cord attached to the metal frame of the bed.

⚠ WARNING:

Before you transport the bed on a tight-fitting elevator, remove the air supply unit from the footboard. Failure to do so could result in personal injury or equipment damage.

4. If you transport the bed on a tight-fitting elevator, do as follows:
   a. Disconnect the three color-coded air hoses from the caregiver’s right-hand side of the air supply unit.
   b. Remove the air supply unit from the footboard.
   c. Lift the air supply unit and its hoses over the footboard, and set the air supply unit and hoses on the foot section of the bed.
5. Put the Point-Of-Care® Brake and Steer System in the **Steer** position.

SHOCK HAZARD:

Before transport, unplug the bed from its power source. Failure to do so could result in personal injury or equipment damage.

6. Unplug the bed from its power source.
7. If bed articulation is necessary, press the **Battery** control to start the battery backup power.
8. Transport the patient as necessary.

After transport is complete, do as follows:

1. Put the Point-Of-Care® Brake and Steer System in the **Brake** position.
2. Plug the bed into an appropriate power source.
3. Lift the air supply unit and its hoses over the footboard, and install the air supply unit on the footboard's mounting bracket.
4. Connect the three color-coded air hoses to the caregiver's right-hand side of the air supply unit.
5. Plug the power cord into the air supply unit.
6. Plug the air supply unit into an appropriate power source.
7. Press the **Power** switch on the air supply unit to the **On** position.
8. Pull the expandable side extensions out from the sides of the bed as necessary (see "Adjust the Width of the Bed" on page -19).
9. Inflate the side bolsters:
    - For an **Excel Air™ Low Airloss Therapy Surface air mattress**, see "Deflate and Inflate the Side Bolsters" on page -28.
    - For an **Excel Air™ Foam Mattress**, see "Deflate and Inflate the Side Bolsters" on page -30.
10. Do a check on the patient's weight, and adjust as necessary (see "Correct the Shown Patient Weight" on page -18).

Mattress Assembly

The Excel Care™ Bariatric Bed has one of these two mattress options:

- Excel Air™ Low Airloss Therapy Surface (see “Excel Air™ Low Airloss Therapy Surface (P611CA)” on page -25)
- Excel Air ™ Foam Mattress with inflatable side bolsters (see “Excel Air™ Foam Mattress with Inflatable Side Bolsters (P612EA)” on page -30)

Install the Mattress and Air Supply Unit

1. Raise the head end of the bed to approximately 30°.
2. Turn the mattress so its foot end is face up at the foot end of the bed.
3. Use the mattress straps on the bottom of the mattress to attach the mattress to the mounting slots at the head, seat, and foot sections of the bed frame. Make sure the mounting brackets correctly attach the mattress straps to the mounting slots.
4. Raise the siderails on the bed (see “Raise and Lower the Siderail” on page -10). Make sure there are no gaps between the mattress and the siderails.
5. Hang the air supply unit on the mounting bracket on the footboard.
6. For an **Excel Air™ Low Airloss Therapy Surface**, connect the hoses from the mattress to their respective color-coded connectors on both sides of the air supply unit:
   - On the **patient right-hand** side of the air supply unit, connect the **red**, **blue**, **green**, **white**, **black**, and **yellow** hoses.
   - On the **patient left-hand** side of the air supply unit, connect the **white**, **black**, and **yellow** hoses.

NOTE:
The **yellow** hose is the low airloss hose from the top cover of the mattress.

7. For an **Excel Air ™ Foam Mattress** with inflatable side bolsters (see “Excel Air™ Foam Mattress with Inflatable Side Bolsters (P612EA)” on page -30), connect the **white** and **black** hoses from the mattress to the color-coded connectors on the **patient right-hand** side of the air supply unit.

⚠ WARNING:
Incorrect use or handling of the power cord may result in damage to the power cord. If damage has occurred to the power cord, immediately remove the bed from service, and contact the appropriate maintenance personnel. Failure to do so could result in personal injury or equipment damage.

8. Plug the power cord into the patient’s left-hand side of the air supply unit.
9. Use the seven magnets to attach the power cord along the bed to an appropriate power source:
   a. Attach the power cord to the metal frame at the air supply unit.
   b. Attach the power cord at the patient’s left foot corner of the bed.

c. Attach the power cord along the intermediate frame on the patient's left-hand side of the bed.

d. Attach the power cord at the patient's head left corner of the bed.

10. Plug the air supply unit in an appropriate power source.
11. Press the **Power** switch to the **On** position.
12. For an **Excel Air™ Low Airloss Therapy Surface**, set up the unit for the patient (see "Set Up the Unit for the Patient" on page -25).

Use the Air Supply Unit

The air supply unit provides a *real-time* display of air pressure for the head, seat, and foot sections of the mattress assembly.

For an **Excel Air™ Low Airloss Therapy Surface**, the amount of pressure to support a patient can be set automatically, based on the patient's height and weight, or manually, for custom configurations. All settings are stored in non-volatile memory. If power is interrupted, the air supply unit automatically returns to the previous settings when the power returns.

The air supply unit has the following controls:

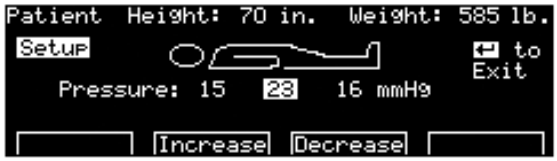
- **Enter**—Moves to and from the **Patient Setup** screen.
- **Help**—Shows the **Help** screen.
- Arrows—Selects settings on the **Patient Setup** screen.
- **Menu**—Selects the **Menu** options.

Excel Air™ Low Airloss Therapy Surface (P611CA)

The Excel Air™ Low Airloss Therapy Surface is a microprocessor-controlled therapeutic mattress system that supplies three zone, continuous, low pressure and low airloss therapies. The Excel Air™ Low Airloss Therapy Surface is for patient weights up to 995 lb (451 kg).

Set Up the Unit for the Patient

Enter the Patient's Height and Weight



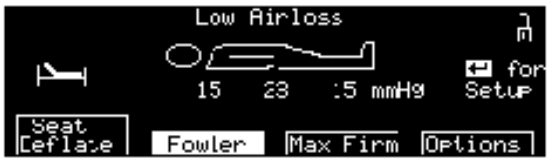
1. At the main **Low Airloss** screen, press **Enter**. The **Patient Setup** screen shows.
2. Use the arrow keys to select **Height** or **Weight**.
3. To enter the patient's height and weight settings, press **Increase** or **Decrease**. The unit automatically adjusts the pressures according to the set height and weight.
4. Press **Enter** to return to the main **Low Airloss** screen.

Adjust the Comfort Setting

1. At the main **Low Airloss** screen, press **Enter**. The **Patient Setup** screen shows.
2. Use the arrow keys to move the cursor to the desired pressure setting: head, seat, or foot.
3. To adjust the setting to the desired value, press **Increase** or **Decrease**.
4. Press **Enter** to return to the main **Low Airloss** screen.

Therapy Modes

Low Airloss



The Low Airloss therapy mode delivers low airloss therapy through the top cover for a flow of diffused air directly to the patient's skin through thousands of microscopic microvents using Microvent Technologies™[1]. Low airloss therapy is always on.

Continuous Low Pressure

Continuous Low Pressure therapy provides a static surface with low pressures.

1. Microvent Technologies™ is a trademark of SenTech Medical Systems, Inc.

Max Firm

NOTE:
The mattress goes into Hyper-Inflate mode to inflate the mattress after Seat Deflate mode. It does **not** goes into Max Firm mode.

For patient transfer and medical treatment, the Max Firm mode gives a firm surface. To select Max Firm mode, do as follows:

1. Press **Max Firm**:

   - If the unit is in Low Airloss mode, the **Max Firm (65 mm Hg)** screen shows.

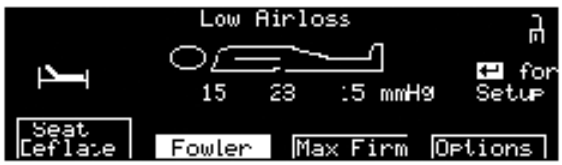
   - If unit is in Side Deflate mode, the **Side Deflate Active (Max Firm Active)** screen shows.

2. If the unit is in Max Firm mode for 30 minutes, the alarm sounds, and the **Warning: Max Firm Selected** screen shows. To turn the alarm off for 10 minutes, press **Alarm Off**.

3. To return to the previous therapy mode, press **Max Firm** again.

Fowler Boost

For patients in an inclined position, the Fowler Boost therapy increases pressure in the seat zone. To select the Fowler Boost, press **Fowler**.

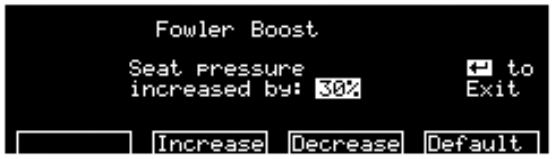


When the unit is in Fowler Boost mode, the **Fowler Boost** indicator is on.

When the unit is turned on, it automatically defaults to Fowler Boost mode. The standard Fowler Boost setting is **30%** more than the seat section's set pressure. To change the Fowler Boost setting, do as follows:

1. Press **Options**. The **Select Options** screen shows.

2. Press **Adjust Fowler**. The **Fowler Boost** screen shows.



3. Press one of these to adjust the pressure as applicable:
   - **Increase**
   - **Decrease**
   - **Default**—Selects the standard setting of **30%**.
4. Press **Enter** to return to the previous therapy screen.

Lock or Unlock the Control Panel

1. Press **Options**. The **Select Options** screen shows.
2. Press **Lock Keypad**. The control panel's lockout status changes, and the previous therapy screen shows.

NOTE:
When the control panel is locked, the **Lockout** indicator shows.

Deflate and Inflate the Mattress Assembly

Deflate and Inflate the Seat Section for Patient Exit or Entry

1. Press **Seat Deflate**. The **Do you want to deflate seat section?** screen shows.

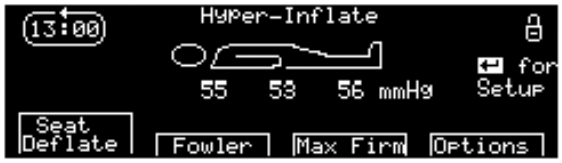
2. Press **Yes**. The **Seat Deflate Active** screen shows, and the seat section deflates.
3. If the knee section is raised, press the **Knee Down** control to lower the knee section while the seat section deflates.

4. If necessary for patient exit, do as follows at the side of the bed the patient is exiting:
   a. Lower the siderail (see "Raise and Lower the Siderail" on page -10).
   b. Retract the siderail extenders (see "Adjust the Width of the Bed" on page -19).
5. If the seat section is deflated for more than 30 minutes, the alarm sounds. To turn the alarm off for 10 minutes, press **Alarm Off**.

6. To inflate the seat section and exit the Seat Deflate mode, press **Inflate and Exit**. The **Surface Inflating** screen flashes for 10 seconds.

7. The unit goes into Hyper-Inflate mode to inflate the mattress to 55 mm Hg (29"H_2O) for 13 minutes:

   - If the unit is in Low Airloss mode, the **Hyper-Inflate** screen shows.



   - If the unit is in Side Deflate mode, the **Side Deflate Active (Hyper-Inflate Active)** screen shows.

Deflate and Inflate the Side Bolsters

1. At the **Low Airloss** screen, press **Options.** The **Select Options** screen shows.

2. Press **Deflate Sides**. The **Sides Deflating** screen shows. The side bolsters deflate for four minutes, and then the **Side Deflate Active** screen shows.

NOTE:
During Side Deflate mode, you may use Seat Deflate mode, Max Firm mode, or Fowler Boost mode as necessary.

3. If the side bolsters are deflated for 30 minutes, an alarm sounds, and the **Warning: Side Deflate Active** screen shows. To turn the alarm off for 10 minutes, press **Alarm Off**.

4. To inflate the side bolsters, do as follows:

   a. Press **Options**. The **Select Options** screen shows.

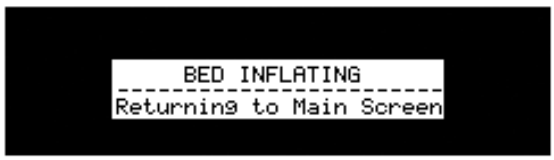
   b. Press **Inflate Sides**. The side bolsters inflate, and the unit returns to Low Airloss mode in 10 seconds.

Deflate the Mattress

1. Press **Options.** The **Select Options** screen shows.

2. Press **Deflate Bed**. The **Bed Deflate Active** screen shows, and the mattress deflates.

3. To inflate the **mattress**, press **Inflate and Exit**. The **Bed Inflating** screen flashes for 10 seconds.



4. The unit goes into Hyper-Inflate mode to inflate the mattress to 55 mm Hg (29"H_2O) for 13 minutes and then returns to the previous therapy.

Solve a System Alarm Condition

If the unit detects an alarm condition in the mattress, the **System Alarm** screen shows. Solve a system alarm condition as follows:

1. Press **Alarm Off** to silence the alarm for 10 minutes.
2. Refer to the **System Alarm** screen to determine the alarm condition.

NOTE:
The **System Alarm** screen shows two rows of pressure in the three zones—head, seat, and foot. The air cells are numbered #1 through #22, starting at the head end of the bed. To determine which air cells and hose(s) cause the alarm condition, refer to the tables below.

Top Row Air Cell Connections to Hoses

	Head	Seat	Foot
Hose color	Red	Blue	White
Air cells	1, 3, 5	7, 9, 11, 13	15, 17, 19

Bottom Row Air Cell Connections to Hoses

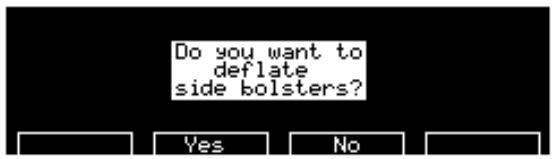
	Head	Seat	Foot
Hose color	White	Black	Black
Air cells	2, 4, 6	8, 10, 12, 14	16, 18, 20

3. When the problem is solved, press **Reset Alarm**.

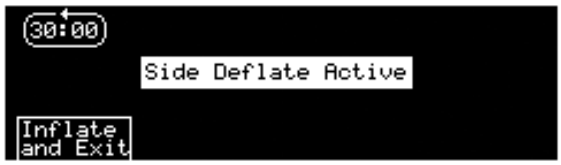
Excel Air™ Foam Mattress with Inflatable Side Bolsters (P612EA)

The foam mattress with inflatable side bolsters is for patient weights up to 1000 lb (454 kg). The width of the foam mattress is adjustable from 40" to 50" (102 cm to 127 cm). For patient transport, the bed can go through a 48" (122 cm) doorway when the side bolsters are deflated and the side extensions of the bed are pushed in.

Deflate and Inflate the Side Bolsters



1. At the **Foam Mattress** screen, press **Deflate Side Bolsters**. The **Do you want to deflate side bolsters?** screen shows.

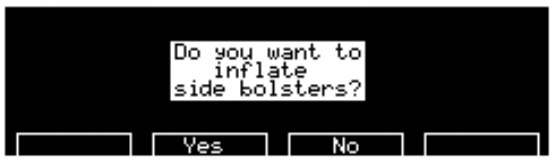


2. Press **Yes**. The **Side Deflate Active** screen shows, and the side bolsters deflate.

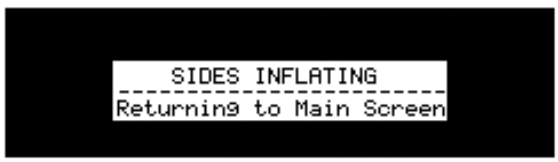
NOTE:
Pressing **No** returns you to the **Foam Mattress** screen.

3. If the side bolsters are deflated for 30 minutes, an alarm sounds. To turn the alarm off for 10 minutes, press **Alarm Off**.

4. To inflate the side bolsters on the foam mattress, do as follows:



   a. At the **Side Deflate Active** screen, press **Inflate and Exit**. The **Do you want to inflate side bolsters?** screen shows.



   b. Press **Yes**. The **Sides Inflating** screen shows, the side bolsters inflate, and then the **Foam Mattress** screen shows.

NOTE:
Pressing **No** returns you to the **Side Deflate Active** screen.

Accessories

Accessories

Part Number	Description
P2217	IV Pole
P158	Infusion Support System
P276	Oxygen Tank Holder, E-size
P616A	Patient Helper Trapeze Assembly

IV Pole (P2217)

⚠ WARNING:
Do not exceed the load capacity of the IV pole. If the IV pole is overloaded, personal injury or equipment damage may occur.

⚠ WARNING:
Failure to correctly attach the IV pole could let it fall, resulting in personal injury or equipment damage.

⚠ WARNING:
Uneven loading of the IV pole could let the contents fall, resulting in personal injury or equipment damage.

⚠ WARNING:
If the IV pole is installed at the foot end of the bed, make sure the **Knee Up** and **Down** controls are locked out. Failure to do so can result in personal injury or equipment damage.

⚠ WARNING:
The head end equipment sockets do not move up and down with the sleep deck. Use appropriate precautions with gravity-sensitive devices such as ventricular drains or lumbar drains before, during, and after operating bed functions. Make sure flow rates on all gravity-fed IVs are correct after bed height adjustment. Failure to correctly manage patient equipment could result in patient injury.

⚠ CAUTION:
When lowering the upper section of an IV pole, always grasp and hold the upper section of the pole before pulling the release knob. Failure to do so may cause equipment damage.

The IV pole is a removable, telescopic pole that installs in any of the equipment sockets. The IV pole has a safe working load of 25 lb (11 kg).

To install the IV pole, set the IV pole into any of the four equipment sockets, and turn the IV pole a quarter turn to keep it in the equipment socket.

Removal is opposite of installation.

NOTE:
For gravity drain applications, added height is recommended.

Infusion Support System (P158)

⚠ WARNING:

If the Infusion Support System (ISS) pole is installed at the foot end of the bed, make sure the **Knee Up** and **Down** controls are locked out. Failure to do so can result in personal injury or equipment damage.

⚠ WARNING:

Do not exceed the load capacity of the ISS pole. If the ISS pole is overloaded, personal injury or equipment damage may occur.

⚠ WARNING:

Failure to correctly attach the ISS pole could let it fall, resulting in personal injury or equipment damage.

⚠ WARNING:

Uneven loading of the ISS pole could let the contents fall, resulting in personal injury or equipment damage.

⚠ CAUTION:

Do not mount infusion pumps on the lower section of an ISS pole. Doing so may cause interference with head section articulation. Equipment damage could occur.

⚠ CAUTION:

When lowering the upper section of an ISS pole, always grasp and hold the upper section of the pole before pulling the release knob. Equipment damage could occur.

The ISS consists of a movable and adjustable IV pole. The pole supports IV pumps or bags in a vertical position and raises or lowers the pumps or bags with respect to the system frame. The ISS pole has a safe working load of 20 lb (9 kg).

The head end of the system has attaching points for two mobile infusion support systems. Each ISS can support one infusion pump plus two liters of intravenous solution.

Before installing the ISS pole, install the P163 adapter bracket.

Oxygen Tank Holder, E-Size (P276)

⚠ WARNING:
Do not exceed the load capacity of the oxygen tank holder. If the oxygen tank is overloaded, personal injury or equipment damage may occur.

⚠ WARNING:
Failure to correctly attach the oxygen tank holder could let it fall, resulting in personal injury or equipment damage.

⚠ WARNING:
Uneven loading of the oxygen tank holder could let the contents fall, resulting in personal injury or equipment damage.

The oxygen tank holder attaches to the head end of the base frame in a vertical position. The oxygen tank holder holds one **E** size oxygen tank with a regulator. The mounting points location let the affixed oxygen tank holder pivot. The safe working load of the oxygen tank hold is 30 lb (14 kg).

To install the oxygen tank holder, do as follows:

1. Install the mounting bar vertically into an equipment socket at either the head end or foot end of the articulating frame.
2. If installing the oxygen tank holder at the **foot end** of the bed, make sure the **Knee Up**/**Down** control is locked out.
3. Place the oxygen tank in the oxygen tank holder.
4. Tighten the holder thumbscrew to keep the oxygen tank from turning.

To remove the oxygen tank holder, do as follows:

1. Loosen the thumbscrew that holds the oxygen tank tight in the oxygen tank holder.
2. Lift the oxygen tank out of the oxygen tank holder.
3. Lift up on the oxygen tank holder, and remove it from the equipment sockets.

Cleaning

⚠ WARNING:

Follow the product manufacturer’s instructions. Failure to do so could result in personal injury or equipment damage.

SHOCK HAZARD:

The potential for electrical shock exists with electrical equipment. Failure to follow facility protocols may result in death or serious personal injury.

SHOCK HAZARD:

Before cleaning any portion of the bed, unplug the unit from its power source. Failure to do so could result in personal injury or equipment damage.

SHOCK HAZARD:

Do not expose the unit to excessive moisture. Personal injury or equipment damage could occur.

⚠ CAUTION:

Do not use harsh cleansers, solvents, or detergents. Equipment damage could occur.

General Cleaning

We recommend that you clean the unit with detergent and warm water. Do not use excessive liquid or harsh cleansers. Do **not** use a power washer to clean the bed.

Steam Cleaning

Do not use any steam cleaning device on the unit. Excessive moisture can damage mechanisms in this unit.

Cleaning Hard to Clean Spots

To remove difficult spots or stains, we recommend that you use standard household cleansers and a soft bristle brush. To loosen heavy, dried-on soil, you may first need to saturate the spot.

Disinfecting

When there is visible soilage and also between patient use, we recommend that you disinfect the unit using an intermediate level, EPA registered (US only) disinfectant.

Dilute and use the disinfectant as specified on the manufacturer's label.

Clean the Mattress Assembly

Coverlet (Excel Air™ Low Airloss Therapy Surface Only)

Between patients, and for **heavy** soilage such as visible signs of body fluids and/or substances, do the following to completely clean and disinfect the coverlet:

1. Machine-wash the coverlet with chlorine bleach (50 ppm to 150 ppm) or detergent and an effective intermediate level disinfectant, such as PRO-TECH™[1] disinfectant cleaner. (For customers in the US, the disinfectant should be registered with the Environmental Protection Agency.)

NOTE:
2.5 oz of bleach per 10 g of water is approximately 100 ppm of available chlorine.

   a. Use the bleach or disinfectant as instructed in the manufacturer's instructions.

   b. To determine the amount of bleach or disinfectant to use, determine the amount of water in the washer, and follow the manufacturer's dilution instructions.

   c. During the wash cycle, soak the coverlet in the disinfectant or bleach.

   d. Let the coverlet rinse thoroughly in clean water.

⚠ CAUTION:

Do **not** dry the coverlet using high temperatures. Air dry, or select a low or non-heat dry cycle such as air fluff. High temperatures could destroy the coating that makes the coverlet waterproof yet breathable.

2. Use the **lowest** temperature setting of the dryer to dry the coverlet. Do **not** use high temperatures.

For **light** soilage when there are **no** visible signs of body fluids or substances, do the following to sanitize the coverlet:

1. Wipe down the coverlet with chlorine bleach (50 ppm to 150 ppm) or mild detergent and warm water followed by an approved intermediate level disinfectant, such as PRO-TECH™ disinfectant cleaner:

   a. Let the bleach or disinfectant remain in contact with the surface as instructed in the manufacturer's instructions.

   b. Remove the bleach or disinfectant, and rinse with warm water.

2. Let the coverlet completely air dry.

Bottom Shell and Vapor Barrier

Wipe down the bottom shell and vapor barrier with an approved disinfectant, and let them air dry.

1. PRO-TECH™ is a trademark of Central Solutions, Inc.

Clean the Excel Air™ Low Airloss Therapy Surface Filter

⚠ CAUTION:

Keep the filters clean. Failure to do so could result in equipment damage.

To keep the Excel Air™ Low Airloss Therapy Surface operating correctly, make sure the filter is clean. After 800 hours of operation, when the air supply unit is turned on, the **Replace Filter** screen shows as a reminder replace the filters. To replace the filters later, press the **Remind me later** control. When the air supply unit is turned on again, the **Replace Filter** screen will show.

1. Unplug the air supply unit from its power source.
2. At the bottom of the air supply unit, open the two filter grill covers, and remove the filters. Do **not** unscrew the filter assembly from the air supply unit.

NOTE:
The **white** filter housing is the air intake filter. The **black** filter housing is the cooling fan filter.

3. Wash the filters in mild detergent, and let them air dry.
4. If the filters **cannot** be cleaned, or if the filters are damaged, replace them.
5. Set the clean or new filters in the filter housings, and close the filter grill covers.
6. Install the **white** filter housing under the side with **three** connectors.
7. Install the **black** filter housing under the side with **six** connectors.

Maintenance

⚠ WARNING:

Only facility-authorized personnel should service the Excel Care™ Bariatric Bed. Servicing by unauthorized personnel could result in personal injury or equipment damage.

⚠ WARNING:

Before bed use, correct any differences noted during the examination. Failure to do so could result in patient injury or equipment damage.

The amount of time the bed is used dictates the amount of maintenance necessary. To make sure the bed operates correctly, do the periodic bed examinations. Before bed use, correct differences noted during the examination.

Do the following examination after the first two weeks of use and then, at a minimum, every six months:

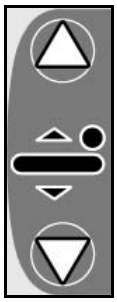
1. Make sure all bolts are fully tightened.
2. Make sure all pins are in the locked position and are fully connected.
3. Examine all welds.
4. Make sure all electrical connections are connected.

Do this examination every six months:

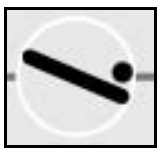
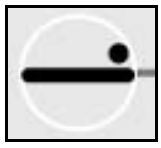
1. Use light grease to lubricate all slides and pivot points.
2. Examine all electrical wiring for any frays, kinks, and/or deterioration.
3. Examine the covering of the bed’s control panel, including the patient lockout features, to make sure the covering is not cracked or damaged.

Product Symbol Definition

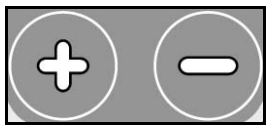
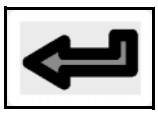
Product Symbol Definition

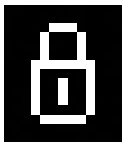
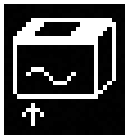
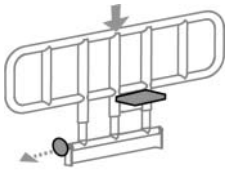
Symbol	Description
	Type B applied part according to IEC 60601-1 (UL 60601-1).
IPX4	According to IEC 60529, Rating for protection against fluid ingress and identified as equipment that is protected against spraying and splashing water.
	CAUTION: Consult accompanying documents.
[a]	Medical Electrical Equipment Classified By Underwriters Laboratories Inc. with respect to Electric Shock, Fire, and Mechanical Hazards only in accordance with UL60601-1, CAN/CSA C22.2 No. 601.1, EN60601-1, IEC60601-1-2, IEC60601-2-38, and IEC60601-1-4.
	Safe Working Load—Shows the safe working load of the bed.
CPR	**CPR** control—Engages the CPR function
	**Hilow** control—Raises and lowers the bed.

a. The UL logo is a registered trademark of Underwriter's Laboratories, Inc.

Symbol	Description
	Head Up/Down control—Raises and lowers the head section of the bed.
	Knee Up/Down control—Raises and lowers the knee section of the bed.
	Battery control—Shows the battery backup power.
	Enable control—Lets all controls not inside the blue areas on the head end siderails to function.
	**Trendelenburg** control—Starts the Trendelenburg function on the bed.
	Reverse Trendelenburg control—Starts the Reverse Trendelenburg function on the bed.
	**Bed Flat** control—Puts the sleep deck in a flat position.

Symbol	Description
	Master Lockout control—Locks out or unlocks all bed articulation functions.
	Knee Up/Down lockout—Locks out the Knee Up/Down function.
	Head Up/Down lockout—Locks out the Head Up/Down function.
	Hilow lockout—Locks out the Bed Hilow function.
	Bed Not Down indicator—Comes on when the bed is not in the full down position.
	Service Required indicator—Flashes to show a bed malfunction.
	Weigh control—Shows the weight.
	Zero control—Resets the scale to zero.

Symbol	Description
	Lb/Kg control—Changes the shown patient weight between pounds (lb) and kilograms (kg).
	Hold control—Holds the shown patient weight so items can be changed on the bed.
	**Add/Subtract** control—Increases or decreases the shown patient weight.
	Menu control—Selects **Menu** options.
	**Enter** control—Enters and exits the **Patient Setup** screen.
	Help control—Shows the **Help** screen.
	Arrow controls—Select settings on the **Patient Setup** screen.
	Mattress pressures—Shows the inflation pressures at the different sections of the mattress assembly during therapy.
	Fowler Boost indicator—Shows that the unit is in Fowler Boost mode.
	Timer—Shows the unit's time remaining in Max Firm, Seat Deflate, or Side Inflate mode.

Symbol	Description
	**Lockout** indicator—Shows that the control panel is locked out.
	**Replace Filter** indicator—Shows the location of the air filter.
	Shows how to raise or lower the vertical height of the siderail and lower or raise the siderail to or from its stowed position under the bed frame.
	Do not put feet on this area.

Specifications

Excel Care™ Bariatric Bed Specifications

Feature	Dimension
Maximum overall width	43" to 53" (109 cm to 135 cm)
Sleep deck width	40" to 50" (102 cm to 127 cm)
Length with headboard and footboard installed, without air supply unit	100" (254 cm)
Sleep deck length	88" (224 cm)
Height from floor to sleep deck	17" to 29" (43 cm to 74 cm)
Head section angle	0° to 50°
Knee section angle	0° to 20°
Trendelenburg angle	0° to 12°
Reverse Trendelenburg angle	0° to 10°
Caster size	6" (15 cm)
Roller bumper size	3" (8 cm)

Excel Air™ Low Airloss Therapy Surface Specifications

Feature	Dimension
Air supply unit height	12.1" (30.7 cm)
Air supply unit width	14.5" (36.8 cm)
Air supply unit depth	6.0" (15.2 cm)
Air supply unit weight	21 lb (10 kg)
Power requirements	120 V, 60 cycle AC
Fuse	3.15 A
Maximum current	< 1.0 A
Storage temperature	14°F to 140°F (-10°C to 60°C)
Operating weight range	250 lb to 995 lb (113 kg to 451 kg)
Operating height range	50" to 78" (127 cm to 198 cm)
Mattress height—inflated	8" (20 cm)
Mattress width	40" to 50" (102 cm to 127 cm)
Mattress length—inflated	88" (224 cm)

Environmental Conditions for Transport and Storage

Condition	Range
Temperature (**frame** and **mattress** only)	-40°F to 158°F (-40°C to 70°C)
Temperature (**air supply unit** only)	-4°F to 158°F (-20°C to 70°C)
Relative humidity	10% to 95% non-condensing
Pressure	50 kPa to 106 kPa

Environmental Conditions for Use

Condition	Range
Temperature	50°F to 94°F (10°C to 35°C) ambient temperature
Relative humidity range	20% to 85% non-condensing
Atmospheric pressure	70 kPa to 106 kPa

AC Power Requirements

Condition	Range
Rated voltage	120 V AC
Power/input	6 A
Frequency	60 Hz

Regulations, Codes, and Standards

The Excel Care™ Bariatric Bed is designed and manufactured to applicable UL and CSA safety requirements and these equipment classifications and standards.

Classification and Standards

Technical and quality assurance standards	UL 60601-1 CSA C22.2 No. 601.1 IEC 60601-2-38 EN 60601-1 IEC 60601-1-2 IEC 60601-1-4 EN ISO 9001 and EN 13485
Equipment classification per IEC 60601-1	Class I equipment, internally powered equipment
Degree of protection against electric shock	Type B
Classification according to Directive 93/42/EEC	Class I, Class IIa for air surface
Degree of protection against ingress of water	IPX0 for the air supply unit IPX4 for the bed IPX7 for the patient pendant
Degree of protection against the presence of flammable anaesthetic mixtures	Not for use with flammable anaesthetics
Mode of operation	Continuous operation with intermittent loading, 3 minutes ON/30 minutes OFF
Sound level (measured 1 meter from patient’s ear)	< 52 dBA

Electromagnetic Emissions Guidance

Guidance and Manufacturer's Declaration—Electromagnetic Emissions		
The Excel Care™ Bariatric Bed Model P610A is intended for use in the electromagnetic environment specified below. The customer or the user of the Model P610A should make sure it is used in such an environment.		
Emissions Test	**Compliance**	**Electromagnetic Environment—Guidance**
RF emissions CISPR 11	Group 1	The Model P610A uses RF energy only for its internal functions. Therefore, its RF emissions are low and are not likely to cause any interference in nearby electronic equipment.
RF Emissions CISPR 11	Class A	The Model P610A is suitable for use in all establishments other than domestic and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
Harmonic Emissions IEC 61000-3-2	Not Applicable	
Voltage Fluctuations/ Flicker Emissions IEC 61000-3-3	Not Applicable	

Electromagnetic Immunity Guidance

Guidance and Manufacturer's Declaration - Electromagnetic Immunity			
The Excel Care™ Bariatric Bed (P610A) is intended for use in the electromagnetic environment specified below. The customer or the user of the P610A should make sure it is used in such an environment.			
Immunity Test	**IEC 60601 Test Level**	**Compliance Level**	**Electromagnetic Environment—Guidance**
Electrostatic Discharge (ESD) IEC 61000-4-2	± 6 kV Contact ± 8 kV Air	± 6 kV Contact ± 8 kV Air	Floors should be wood, concrete, or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%.
Electrical Fast Transient/Burst IEC 61000-4-4	± 2 kV on Power Supply Lines ± 1 kV on Input/ Output Lines	± 2 kV on Power Supply Lines ± 1 kV on Input/ Output Lines	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	± 1 kV Differential Mode (line-line) ± 2 kV Common Mode (Line-Ground)	± 1 kV Differential Mode (line-line) ± 2 kV Common Mode (Line-Ground)	Mains power quality should be that of a typical commercial or hospital environment.
Voltage Dips, Short Interrupts, and Variations On Power Supply Lines IEC 61000-4-11	< 5% U_T (95% dip in U_T for 0.5 cycles) < 40% U_T (60% dip in U_T for 5 cycles) < 70% U_T (30% dip in U_T for 25 cycles) < 5% U_T (95% dip in U_T for 5 seconds)	< 5% U_T (95% dip in U_T for 0.5 cycles) < 40% U_T (60% dip in U_T for 5 cycles) < 70% U_T (30% dip in U_T for 25 cycles) < 5% U_T (95% dip in U_T for 5 seconds)	Mains power quality should be that of a typical commercial or hospital environment. If the user of the P610A requires continued operation during power mains interruptions, it is recommended that the P610A be powered from an uninterruptable power supply or a battery.
Power Frequency (50/60 Hz) Magnetic Fields IEC 61000-4-8	3 A/m	3 A/m	The power frequency magnetic field should be at levels characteristic of a typical location in a typical commercial or hospital environment.
Note 1: U_T is the AC mains voltage prior to application of the test level.			
Note 2: The compliance levels in the ISM frequency range 150 kHz to 2.5 GHz are intended to decrease the likelihood that mobile/portable communications equipment could cause interference if it is inadvertently brought into the patient area. However, emission limits, IEC 60601 test levels, and tests specified in IEC 60601-1-2:2001 do not address electromagnetic compatibility of electrical equipment at very close distances. Care should always be exercised when using any electrical or RF equipment in the immediate patient area.			

Electromagnetic Immunity Guidance

Guidance and Manufacturer's Declaration - Electromagnetic Immunity			
The Excel Care™ Bariatric Bed (P610A) is intended for use in the electromagnetic environment specified below. The customer or the user of the P610A should make sure it is used in such an environment.			
Immunity Test	**IEC 60601 Test Level**	**Compliance Level**	**Electromagnetic Environment—Guidance**
			Portable and mobile RF communications equipment should be used no closer to any part of the P610A, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. **Recommended separation distance**
Conducted RF IEC 61000-4-6	3 V/m 150 kHz to 80 MHz	3 V/m	$d = \left[\frac{3.5}{3}\right]\sqrt{P}$
Radiated RF IEC 61000-4-3	8 V/m 80 MHz to 2.5 GHz	8 V/m	$d = \left[\frac{3.5}{8}\right]\sqrt{P}$ 80 MHz to 800 MHz $d = \left[\frac{7}{8}\right]\sqrt{P}$ 800 MHz to 2.5 GHz where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in meters (m). Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey[a], should be less than the compliance level in each frequency range[b]. Interference may occur in the vicinity of equipment marked with this symbol:
Note 1: At 80 MHz and 800 MHz, the higher frequency range applies.			
Note 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects, and people.			

a. Field strengths from fixed transmitters such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast, and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the P610A is used exceeds the applicable RF compliance level above, the P610A should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as changing the position of or relocating the P610A.

b. Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3 V/m.

Recommended Separation Distances

Recommended Separation Distances Between Portable and Mobile RF Communications Equipment and the P610A			
The Excel Care™ Bariatric Bed (P610A) is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the P610A can help prevent electromagnetic interference by maintaining a minimum distance between the portable and mobile RF communications equipment (transmitters) and the P610A as recommended below, according to the maximum output power of the communications equipment.			
Rated maximum output power of transmitter (W)	**Separation distance according to frequency of transmitter (m)**		
	150 kHz to 80 MHz $d = \left[\frac{3.5}{3}\right]\sqrt{P}$	**80 MHz to 800 MHz** $d = \left[\frac{3.5}{8}\right]\sqrt{P}$	**800 MHz to 2.5 GHz** $d = \left[\frac{7}{8}\right]\sqrt{P}$
0.01	0.12	0.044	0.087
0.1	0.37	0.14	0.28
1	1.2	0.44	0.87
10	3.7	1.4	2.8
100	12	4.4	8.7
For transmitters rated at a maximum output power not listed above, the recommended separation distance *d* in meters (m) can be estimated using the equation applicable to the frequency of the transmitter, where *P* is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.			
Note 1: At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.			
Note 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects, and people.			

Safety Tips

To help prevent the risk of hospital bed fires, make sure facility personnel follow the safety tips in the *FDA Public Health Notification: Safety Tips for Preventing Hospital Bed Fires.*

Bed Positions

⚠ WARNING:
It is recommended that the bed be in the low position when the patient is unattended. This may reduce the severity of any resultant injuries from patient falls.

⚠ WARNING:
When a patient's condition (such as disorientation due to medication or clinical condition) could lead to patient entrapment, the sleep deck should be left in the flat and lowest position while unattended (except when required otherwise by medical staff for special or particular circumstances). Failure to do so could result in patient injury.

Brakes

⚠ WARNING:
Unless transporting the patient, always set the brakes when the bed is occupied. Reconfirm that the brakes are set before any patient transfer. Failure to do so may result in personal injury or equipment damage.

Brakes should always be set when the bed is occupied and especially when moving a patient from one surface to another. Patients often use the bed for support when getting out of bed and could be injured if the bed moves unexpectedly. After setting the brakes, push and pull the bed to make sure it is stable.

Fluids

⚠ WARNING:
Fluid spills onto the bed electronics can result in a hazard. If such a spill occurs, unplug the bed, and remove it from service. Failure to do so could result in personal injury or equipment damage.

When fluid spills occur outside that seen in normal use, immediately do the following:

- Unplug the bed from its power source.
- Remove the patient from the bed.
- Clean the fluid spill from the bed system.
- Have maintenance examine the system completely.

Do not put the bed back into service until it is completely dry, tested, and determined to be safe to operate.

Siderails/Restraints/Patient Monitoring

⚠ WARNING:
Evaluate patients for entrapment risk according to facility protocol, and monitor patients appropriately.

⚠ WARNING:
Evaluate patients for entrapment risk according to facility protocol, and monitor patients appropriately. Make sure that all siderails are fully latched when in the raised position. Failure to do either of these could result in serious injury or death.

NOTE:
Siderails are intended to be a reminder to the patient of the bed's edges, not a patient-restraining device. When appropriate, Hill-Rom recommends that medical personnel determine the correct methods necessary to make sure a patient remains safely in bed.

⚠ CAUTION:
Do **not** attempt to raise the vertical height of the siderail while pivoting it to the stowed position under the bed. Equipment damage could occur.

Siderails may serve several beneficial uses including providing an edge reminder, bed exit assist, and access to caregiver controls and patient controls. The use of siderails also may provide a sense of security. The use of siderails in the bed position should be determined according to patient need after assessing any risk factors according to the facility protocols for safe positioning.

When raising the siderails, a **click** means that the siderails are completely raised and locked in position. Once the **click** is heard, gently pull on the siderail to make sure it is latched in position.

⚠ WARNING:
Patient restraints are not intended as substitutes for good nursing practices. Physical restraints, even correctly installed, can result in entanglement, physical injury, and death, particularly with agitated and disoriented patients. Monitor patients when using physical restraints in accordance with legal requirements and facility protocol.

⚠ WARNING:
Restraints must be attached to the articulating sections of the system at the correct attachment points. Failure to do so may result in patient injury.

1. Have guidelines to help caregivers determine these:
   - Which patients may need to be restrained and the appropriate restraint to use.
   - The correct method to monitor a patient, whether restrained or not, that includes time interval, visual check of restraint, and such.
2. Develop training programs for all caregivers about the correct use and application of restraints.
3. Maintain the bed at its lowest position whenever a caregiver is not in the room.
4. Make clear the need for restraint devices to families or guardians.

For restraining devices, consult the restraint manufacturer's instructions for use to make sure of the correct application of each restraining device.

Electricity

SHOCK HAZARD:
Correct grounding is achieved only when the bed is plugged into a "hospital-grade" receptacle. Failure to plug the bed into an applicable power source could result in patient injury, personal injury, or equipment damage.

SHOCK HAZARD:
The potential for electrical shock exists with electrical equipment. Failure to follow facility protocol could result in death or serious injury.

WARNING:
Significant fluid spills on the bed electronics can result in a hazard. If such a spill occurs, unplug the bed, and remove it from service. Thoroughly clean the bed and let it dry; then have service personnel do a check on the bed. Failure to do so could result in serious injury or equipment damage.

CAUTION:
Before transporting the bed, make sure that the power cord, hoses, and other equipment are correctly stowed. Failure to do so could result in equipment damage.

WARNING:
Incorrect use or handling of the power cord may result in damage to the power cord. If damage has occurred to the power cord, immediately remove the bed from service, and contact the appropriate maintenance personnel. Failure to do so could result in personal injury or equipment damage.

WARNING:
If the integrity of the external protective earth conductor is in doubt, operate the bed from its internal electrical power source. Failure to do so could result in personal injury.

WARNING:
Keep the bed plugged into the power source until the battery indicator goes off (charging time is approximately 10 hours). Failure to do so could result in the inability to operate the bed when power is not available.

⚠ CAUTION:

This device meets all requirements for electromagnetic compatibility per EN 60601-1-2. It is unlikely that the user will encounter problems with this device because of inadequate electromagnetic immunity. However, electromagnetic immunity is always relative, and standards are based on anticipated environments of use. If the user notes unusual device behavior, particularly if such behavior is intermittent and associated with nearby use of radio or TV transmitters, cell phones, or electro-surgical equipment, this could be caused by electromagnetic-interference. If such behavior occurs, the user should try moving the interfering equipment further from this device.

⚠ WARNING:

Do not connect the power cord to an extension cord or multiple outlet strip. The risk of overheating and fire may result in personal injury or property damage.

⚠ WARNING:

Do not cover the bed's power cord with a rug or carpet. The risk of overheating and fire may result in personal injury or property damage.

Examine the covering of the bed's control panel, including the patient lockout features, to make sure the covering is not cracked or damaged.

Policies and procedures must be established to train and educate your staff on the risks associated with electric equipment. It is never prudent or necessary for persons to put any part of their body under or between moving parts of the bed. Whenever a bed is being cleaned or serviced, it should be unplugged from its power source, and the lockouts should be engaged to keep the bed from accidentally operating due to the battery backup. Refer to the *Excel Care™ Bariatric Bed Service Manual* (man337).

Parts and Accessories

⚠ WARNING:

Do not exceed the load capacity of the IV pole. If the IV pole is overloaded, personal injury or equipment damage may occur.

⚠ WARNING:

Failure to correctly attach the IV pole could let it fall, resulting in personal injury or equipment damage.

⚠ WARNING:

Uneven loading of the IV pole could let the contents fall, resulting in personal injury or equipment damage.

⚠ WARNING:

If the IV pole is installed at the foot end of the bed, make sure the **Knee Up** and **Down** controls are locked out. Failure to do so can result in personal injury or equipment damage.

⚠ WARNING:

The head end equipment sockets do not move up and down with the sleep deck. Use appropriate precautions with gravity-sensitive devices such as ventricular drains or lumbar drains before, during, and after operating bed functions. Make sure flow rates on all gravity-fed IVs are correct after bed height adjustment. Failure to correctly manage patient equipment could result in patient injury.

⚠ WARNING:

If the Infusion Support System (ISS) pole is installed at the foot end of the bed, make sure the **Knee Up** and **Down** controls are locked out. Failure to do so can result in personal injury or equipment damage.

⚠ WARNING:

Do not exceed the load capacity of the ISS pole. If the ISS pole is overloaded, personal injury or equipment damage may occur.

⚠ WARNING:

Failure to correctly attach the ISS pole could let it fall, resulting in personal injury or equipment damage.

⚠ WARNING:

Uneven loading of the ISS pole could let the contents fall, resulting in personal injury or equipment damage.

⚠ WARNING:

Do not exceed the load capacity of the oxygen tank holder. If the oxygen tank is overloaded, personal injury or equipment damage may occur.

⚠ WARNING:

Failure to correctly attach the oxygen tank holder could let it fall, resulting in personal injury or equipment damage.

⚠ WARNING:

Uneven loading of the oxygen tank holder could let the contents fall, resulting in personal injury or equipment damage.

⚠ CAUTION:

When lowering the upper section of an IV pole, always grasp and hold the upper section of the pole before pulling the release knob. Failure to do so may cause equipment damage.

⚠ CAUTION:

When lowering the upper section of an ISS pole, always grasp and hold the upper section of the pole before pulling the release knob. Equipment damage could occur.

⚠ CAUTION:

Do not mount infusion pumps on the lower section of an ISS pole. Doing so may cause interference with head section articulation. Equipment damage could occur.

Use only parts and accessories from Hill-Rom. Do not modify the bed system without authorization from Hill-Rom.

Operating Bed/Surface Precautions

⚠ WARNING:

Do **not** use the Excel Care™ Bariatric Bed with patients who weigh more than 1000 lb (454 kg) or are wider than the fully-extended surface width. Patient injury or equipment damage could occur.

⚠ WARNING:

Do not operate the bed in the presence of flammable gas or vapors. To do so could result in personal injury or equipment damage.

⚠ WARNING:

Use oxygen administering equipment of the nasal, mask, or ventilator type only or oxygen tents that can be contained inside the siderails. Failure to do so could result in personal injury or equipment damage.

⚠ WARNING:

Operate the bed within the stated environmental conditions, see “Environmental Conditions for Use” on page 44. Failure to do so could result in patient injury or equipment damage.

⚠ CAUTION:

Do not exceed the load capacity of the drainage bag holders. Equipment damage could occur.

NOTE:
During articulation of the bed functions, a static buildup may occur.

Transport

⚠ CAUTION:

Before transporting the bed, make sure that the power cord, hoses, and other equipment are correctly stowed. Failure to do so could result in equipment damage.

⚠ CAUTION:

Do not push or pull the bed by IV poles, siderails, or other equipment. Use the headboard, footboard, or other designated locations. Failure to do so could result in equipment damage.

⚠ WARNING:

Before you transport the bed on a tight-fitting elevator, remove the air supply unit from the footboard. Failure to do so could result in personal injury or equipment damage.

SHOCK HAZARD:

Before transport, unplug the bed from its power source. Failure to do so could result in personal injury or equipment damage.

Fully extended IV poles could impact doorways or ceiling fixtures. Lower poles prior to patient transport.

Sleep Surface/Mattress

⚠ WARNING:

Do not use mattresses, mattress overlays, mattress replacements, or speciality mattress products that have not been designed by Hill-Rom for the Excel Care™ Bariatric Bed. Use of surface products other than those designed for the Excel Care™ Bariatric Bed could substantially reduce the effectiveness of the safety features incorporated into the system. Patient injury could result.

⚠ WARNING:

Sleep surface impermeability could be affected by needle sticks. Caregivers should be instructed to **avoid** punctures caused by incorrect use of x-ray cassette holders and/or needle sticks. Failure to do so could result in cross-infection and patient injury.

The sleep surface should be regularly inspected for punctures, rips, tears, or other such damage. Replace the surface as necessary.

Flammability

⚠ WARNING:

Patients should not be permitted to smoke in bed. Sheets and pillows generally do not have flame retardance properties. Personal injury or equipment damage could occur.

Reduce the possibility of fires by obeying fire prevention rules and regulations.

Bed Articulations

⚠ WARNING:
Mechanical parts under the bed pose a risk of serious injury. Exercise control over visitors, especially children, to keep people out from under the bed and prevent unauthorized access to the bed positioning controls. Failure to do so could result in patient injury, personal injury, or equipment damage.

⚠ WARNING:
To help prevent inadvertent bed movement, make sure the casters are locked before raising or lowering the head section. Failure to do so could result in patient injury, personal injury, or equipment damage.

⚠ WARNING:
Use caution when lowering the bed frame. To avoid injury, keep extremities from under the lowering bed frame.

Do not operate bed controls until all persons and equipment are clear of mechanisms. To stop a function, release the control, and/or operate the opposite function, and/or immediately unplug the AC power cord.

Monitor lines closely during articulations. Always use good line management techniques, particularly as the head section rises.

Visitor Notification

Instruct visitors not to attempt operation of caregiver controls. Visitors may help the patient with patient controls **only**.

Cleaning and Maintenance

⚠ WARNING:
Follow the product manufacturer's instructions. Failure to do so could result in personal injury or equipment damage.

⚠ WARNING:
Only facility-authorized personnel should service the Excel Care™ Bariatric Bed. Servicing by unauthorized personnel could result in personal injury or equipment damage.

⚠ WARNING:
Before bed use, correct any differences noted during the examination. Failure to do so could result in patient injury or equipment damage.

SHOCK HAZARD:
The potential for electrical shock exists with electrical equipment. Failure to follow facility protocols may result in death or serious personal injury.

SHOCK HAZARD:

Before cleaning any portion of the bed, unplug the unit from its power source. Failure to do so could result in personal injury or equipment damage.

SHOCK HAZARD:

Do not expose the unit to excessive moisture. Personal injury or equipment damage could occur.

CAUTION:

Do not use harsh cleansers, solvents, or detergents. Equipment damage could occur.

CAUTION:

Do **not** dry the coverlet using high temperatures. Air dry, or select a low or non-heat dry cycle such as air fluff. High temperatures could destroy the coating that makes the coverlet waterproof yet breathable.

CAUTION:

Keep the filters clean. Failure to do so could result in equipment damage.

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